1.   Listing of the claims:

1.   (Currently Amended) A method of converting a first motion vector field into a second motion vector field by determining a first one of the motion vectors of the second motion vector field, the first motion vector field being computed, on basis of a first image and a second image of a sequence of images, for a temporal position between the first image and the second image, the method comprising:

establishing a first group of un-referenced pixels in the first image, by selecting a first set of mutually connected pixels of the first image for which the first motion vector field does not comprise respective motion vectors;

establishing a second group of un-referenced pixels in the second image, by selecting a second set of mutually connected pixels of the second image for which the first motion vector field does not comprise respective motion vectors;

computing a match error of a candidate motion vector, which is oriented from the first group of un-referenced pixels to the second group of un-referenced pixels;

comparing the match error with a predetermined match threshold and assigning the candidate motion vector to the first one of the motion vectors of the second motion vector field if the match error is below the predetermined match threshold; and

wherein establishing the second group of un-referenced pixels is based on a spatial environment of the first group of un-referenced pixels and on a particular motion vector which belongs to the first motion vector field and which is located in the spatial environment of the first group of un-referenced pixels.

2-3.   Cancelled.

4.   (Previously Presented) A method of converting as claimed in claim 1, whereby establishing the second group of un-referenced pixels is based on a spatial environment of the first group of un-referenced pixels and a null motion vector.

5.   (Previously Presented)   A method of converting as claimed in claim 1, whereby establishing the second group of un-referenced pixels is based on computing overlap between the first group of un-referenced pixels and a candidate group of un-referenced pixels in the second image.

6.   (Previously Presented) A method of converting as claimed in claim 1, whereby a first number of pixels of the first group of un-referenced pixels is above a first predetermined count threshold.

7.   (Previously Presented) A method of converting as claimed in claim 1, whereby a first number of pixels of the first group of un-referenced pixels is below a second predetermined count threshold.

8.   (Previously Presented) A method of converting as claimed in claim 1, whereby establishing the match error comprises computing differences between respective pixel values of the first and second group of un-referenced pixels.

9.   (Currently Amended) A conversion unit for converting a first motion vector field into a second motion vector field by determining a first one of the motion vectors of the second motion vector field, the first motion vector field being computed, on basis of a first image and a second image of a sequence of images, for a temporal position between the first image and the second image, the conversion unit comprising:

first establishing means for establishing a first group of un-referenced pixels in the first image, by selecting a first set of mutually connected pixels of the first image for which the first motion vector field does not comprise respective motion vectors;

second establishing means for establishing a second group of un-referenced pixels in the second image, by selecting a second set of mutually connected pixels of the second image for which the first motion vector field does not comprise respective motion vectors;

computing means for computing a match error of a candidate motion vector, which is oriented from the first group of un-referenced pixels to the second group of un-referenced pixels; and

comparing means for comparing the match error with a predetermined match threshold and assigning the candidate motion vector to the first one of the motion vectors of the second motion vector field if the match error is below the predetermined match threshold,

wherein establishing the second group of un-referenced pixels is based on a spatial environment of the first group of un-referenced pixels and on a particular motion vector which belongs to the first motion vector field and which is located in the spatial environment of the first group of un-referenced pixels.

10.   (Previously Presented) An image processing apparatus comprising:

receiving means for receiving a signal corresponding to a sequence of input images; and

an image processing unit for calculating a sequence of output images on basis of the sequence of input images and on basis of the second motion vector field being provided by the conversion unit for converting, as claimed in claim 9.

11.   (Previously Presented) An image processing apparatus as claimed in claim 10, characterized in further comprising a display device for displaying the output images.

12.   (Previously Presented) An image processing apparatus as claimed in claim 11, characterized in that it is a TV.

13.   (Previously Presented) A video encoding unit comprising the conversion unit, as claimed in claim 9.

14.   (Currently Amended) A non-transitory computer-readable medium encoded with a computer program for a method to convert a first motion vector field into a second motion vector field by determining a first one of the motion vectors of the second motion vector field, the first motion vector field being computed, on basis of a first image and a second image of a sequence of images, for a temporal position between the first image and the second image, the method comprising:

establishing a first group of un-referenced pixels in the first image, by selecting a first set of mutually connected pixels of the first image for which the first motion vector field does not comprise respective motion vectors;

establishing a second group of un-referenced pixels in the second image, by selecting a second set of mutually connected pixels of the second image for which the first motion vector field does not comprise respective motion vectors;

computing a match error of a candidate motion vector, which is oriented from the first group of un-referenced pixels to the second group of un-referenced pixels; and

comparing the match error with a predetermined match threshold and assigning the candidate motion vector to the first one of the motion vectors of the second motion vector field if the match error is below the predetermined match threshold;

wherein establishing the second group of un-referenced pixels is based on a spatial environment of the first group of un-referenced pixels and on a particular motion vector which belongs to the first motion vector field and which is located in the spatial environment of the first

group of un-referenced pixels.